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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/748,175      | 12/31/2003  | Lukas Trosman        | 24GA127098          | 5553             |

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EXAMINER

BEHREND, HARVEY E

ART UNIT PAPER NUMBER

3641

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/748,175

Applicant(s)

TROSMAN ET AL.

Examiner

Harvey E. Behrend

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 2/1/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 12-20 is/are pending in the application.
- 4a) Of the above claim(s) 18-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-10, 12-17 is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-17 is/are rejected.
- 7) ☐ Claim(s)        is/are objected to.
- 8) ☐ Claim(s)        are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on        is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No.       .
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date       .
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date       .
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:       .

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1. This application contains claims 18-20 drawn to an invention nonelected with traverse in the 8/9/04 response. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144). See MPEP § 821.01.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-10, 12-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague, indefinite and incomplete as to what all is meant by and is encompassed by the reference to the short-length fuel rods being divisible into two rod subgroups with each subgroup having three short-length rods arranged in a triangular-shape.

For example, it is not clear if such means there can only be two subgroups with each of these two subgroups having only three part-length fuel rods arranged in a triangular-shape, or, if such means that two is the minimum number of subgroups present (e.g. one can have 3, 4, 5, 6 or more subgroups) or, if each subgroup can have more than 3 part-length rods or, if the same or one part-length rod can be counted as one of the three part-length rods for each of the two subgroup having three part-length rods (see for example, Figs. 42, 44, 46, 47, 49, 50 of Ueda et al (US 5068082) which shows two subgroups in the region of the fuel assembly centerline, wherein each subgroup can be construed as having three part-length fuel rods with one of these part-

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length rods (e.g. the centermost part-length fuel rod) being shared by or common to both subgroups).

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-10, 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over any of Aoyama et al, Orii et al, or Koyama et al in view of Ueda et al alone or with either Bender et al (II) or Ogiya et al.

The primary references each show the basic structure being claimed including the part-length rods proximate the perimeter wall as well as other part-length rods adjacent the water rods or fuel assembly centerline.

In Orii et al, note Figs. 15, 17, 18, 20, 21, 23 and cols. 12+.

In Koyama et al, note Figs. 1, 3, 9, 11, 12, 13, 14.

In Aoyama et al, note Fig. 14 and cols. 2, 6, 19, 20.

The primary reference do not show the part-length rods in the region of the water rods or fuel assembly centerline as being in at least two subgroups with each subgroup having at least three part-length rods arranged in a triangular-shape.

However, the secondary reference of Ueda et al clearly shows it is a well known and advantageous expedient in this art to provide two groups of part-length rods with the longer of the part-length rods being positioned next to the perimeter or channel wall (being grouped in singles or in pairs next to the perimeter or channel wall) and the shorter of the part-length rods being arranged in groups of three or more in a triangular-shape in the region of or proximate the water rods or fuel assembly centerline (e.g. see Figs. 6, 8, 10, 19, 29, 32, 40, 41, 42, 44, 46, 47, 49, 50, 56, 60, 63, 68, 69).

Accordingly, it would have been prima facie obvious to have modified any of the primary references by providing two sets of part-length rods with the longer of the part-length rods arranged along the perimeter or channel wall as shown in any of the primary references, and with the shorter of the part-length rods arranged in groups of at least three in a triangular-shape proximate the water rods or fuel assembly centerline, as shown to be old and advantageous in this art by the above referenced teachings of Ueda et al.

If necessary, resort may be had to the teachings in either Bender et al or Ogiya et al that it is old and advantageous in this art and hence obvious, to provide a fuel assembly with part-length rods of two different length with the shortest part-length rods proximate the water tube or fuel assembly centerline and with the intermediate length rods positioned outwardly therefrom.

Note that applicants actual claim language does not preclude the presence of more than three part-length rods in a triangular-shape nor does it preclude the two subgroups with three rods therein, from sharing a rod or having a rod common to both groups.

6. Claims 1-10, 12-17 of this application conflict with claims 4, 10, 12 of Application No. 10/748174. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication should be directed to Harvey E. Behrend at telephone number (571) 272-6871. The examiner can normally be reached Tuesday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6973. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'H. Behrend', with a large, stylized flourish at the end.

Behrend/vs  
April 22, 2005

**HARVEY E. BEHREND**  
**PRIMARY EXAMINER**